Coastal Delaware

Semi-Annual Newsletter of the Delaware Coastal Programs, Division of Soil & Water Conservation, Delaware Department of Natural Resources and Environmental Control

Regulations Governing Beach Protection and the Use of Beaches

The Division of Soil and Water's Shoreline and Waterway Management Section is in the process of revising the Regulations Governing Beach Protection and the Use of Beaches which were last updated in 1983 and the Building Line Maps which were created in 1981. An increase in the amount of coastal construction and in the overall size and value of waterfront buildings combined with two decades of erosion has resulted in the need to improve the beach regulations. The revisions will increase the effectiveness of the Coastal Construction Program and improve its protection of the beach and dune system. Redrawing of the Building Line, incorporation of changes to the Beach Preservation Act and the addition of new construction standards for waterfront buildings will all result in less damage to structures and improvements to the natural dune and beach resource.

Notable changes to the revised regulations for construction seaward of the Building Line include changes to the application review process and changes to the requirements for construction of cantilevered decks. Minimal Construction Standards to minimize damage to structures during coastal storms have been added along with new requirements for the construction of temporary seasonal structures.

Two workshops were held in July to gather comments on the first draft of the revised Regulations and the Building Line Maps. The Division is currently working on making revisions to the draft to address the concerns and comments raised during the workshops. Copies of the revised draft will be available for review in mid September of 2003, by calling 739-4411 or

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Delaware Coastal Program's Mission

Preserve, protect, develop and where possible restore and enhance the resources of Delaware's coastal zone by effective administration of the Coastal Management program and the National Estuarine Research Reserve.

Issue No. 3

Fall 2003

Message from DCP Administrator

The Delaware Coastal Programs (DCP) are part of a larger network of state coastal management programs and Estuarine Research Reserves that make up the United States of America Coastal Management Program. As such, our travel for work often brings us to some of the most beautiful places in America, our coasts. Unfortunately, perhaps because of our workload, we often don't get as much time as I would like to explore and study these areas. Yet when I return home to our beaches and bays I am grateful for how beautiful Delaware's coastal zone is and rank it second to none.

This summer's travel took us to Baltimore for Coastal Zone '03. The Coastal Zone Conferences are the premier biannual event that brings hundreds of national and international scientists, policy makers and managers together to discuss current issues in coastal management. Delaware was a co-sponsor of this event with the state of Maryland. DCP presented several papers, moderated panel discussion, prepared posters, presented awards and held a field trip highlighting our Atlantic beaches.

CZ '03 Field trip to Delaware's coast

As co-chair of the conference, I had the honor of presenting two significant awards for leadership in coastal zone management. The first was the Orville T. Magoon Award for Service. It was named for the coastal activist who founded the Coastal Zone Conference Series in 1978. It is intended to be presented to the person who, through his or her volunteer efforts and the giving of their own time, has made the greatest contribution in fostering coastal community cooperation and communication. I had nominated Til Purnell of Millsboro. Til has been an environmental activist and volunteers just about all of her time to protecting the coastal environment (over twenty eight years). She is currently the Secretary of the Delaware Inland Bays National Estuary Program Executive Board and Chair of its Citizen's Advisory Committee. She founded "Save our Wetlands and Bays" and is executive director of the Friends of Herring Creek and is past President of the Sussex County League of Women Voters. Although Til lost by a hair to L. Clifford Schroeder, the founder of the Virginia Oyster Reef Heritage Foundation, her accomplishments and dedication to the coast are commended.

The second award is the Julius A. Stratton Award for Leadership. This award is named for the eminent scientist and educator who chaired the blue ribbon national Commission on Marine Science, Engineering and Resources, which produced the 1969 report, "Our Nation and the Sea." This landmark report became the foundation for the Coastal Zone Management Act and many other important laws and programs for coastal and ocean conservation. The Stratton Award is intended to go to the person or group that has made the greatest difference in leading the cause for the coast, and who can best be labeled as the "Champion of the Coast." Past recipients of this prestigious award include: Sylvia Earle, National Geographic Explorer-in-Residence ('97), Robert. W. Knecht, Professor of Marine Studies at the University of Delaware and "Father of Coastal Zone Management" ('99), and the United States Senator from South Carolina, Ernest Hollings ('01).

I was honored to present the award to Mr. Leon Panetta. For the past three years, Leon Panetta has chaired the Pew Oceans Commission, an independent group conducting the first review of U.S. ocean policy in more than 30 years. As the grandson of a fisherman and life-long resident of Monterey, California, Mr. Panetta has

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been a champion of the coasts and oceans throughout his personal and professional life.

Mr. Panetta continues to be one of the most respected, informed, and articulate voices for the oceans. He is probably the most visible and oft-quoted spokesperson for healthy coasts and oceans in the nation today, and he will continue to speak on behalf of the oceans every chance he gets.

It has been an exciting spring and summer. As fun as it was, I am looking forward to our next opportunity to do something good for Delaware's coasts. There is no place like home, when your home is in Delaware's coastal zone.

Sarah W. Cooksey

Remote Sensing for Coastal Management Highlight - Beach Regulation Coastal Setback Line Update

In 1972, the Delaware Legislature recognized the need to enhance, preserve and protect Delaware's public and private beaches. It passed the Beach Preservation Act to insure its use as protective and recreational lands. The act defines the beach as the area extending from the Mean High Water line of the Atlantic Ocean and Delaware Bay seaward 2,500 feet, and landward 1,000 feet. It extends from the Delaware/Maryland Border to a point north of Pickering Beach, roughly half way up the Delaware Bay. In order to ensure that the beaches and dunes can perform their protective and recreational functions, a Beach Setback Line, also known as a Building Line, was created to keep construction a proper distance away from the shore. The Delaware Department of Natural Resources and

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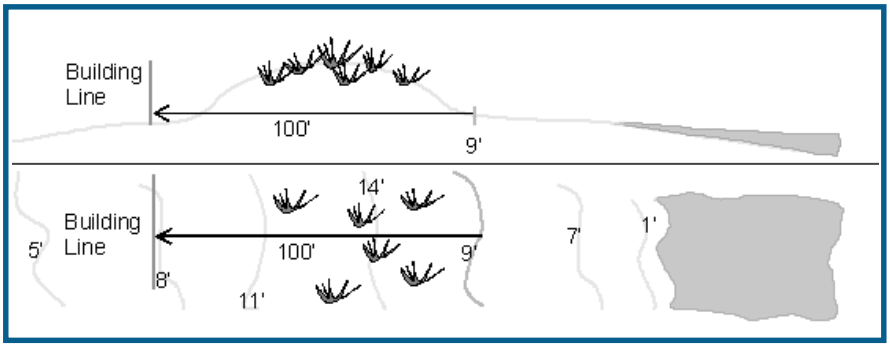

Diagram courtesy of Maria Sadler, Shoreline and Waterway Management

How You Can Prevent or Minimize Storm Damage

- Maintain a healthy well vegetated dune of sufficient height and width in front of your house. Don't create low spots by trampling vegetation.
- Don't use concrete for your building foundation, floors or driveways in coastal areas. Concrete slabs can be undermined and destroyed during storms. The resulting debris can cause additional damage to your home.
- Elevate your structure and all amenities above Base Flood Elevation.
- Keep the area underneath your house open to allow floodwaters and waves to flow unobstructed.
- Minimize potential projectiles.
- Use galvanized metal hurricane straps to fasten your roof and walls.
- Check all strapping periodically to make sure they are corrosion free.
- Contact DNREC before you build by calling (302) 739-4411.

S. Bethany Beach Noreaster storm damage, 1998

Delaware Clean Marina Program Launch

The Clean Marina Program is a voluntary, incentive-based program that encourages marina operators and recreational boaters to protect coastal water quality by engaging in environmentally sound operating and maintenance procedures. The program offers information, guidance, and technical assistance to marina operators, local governments, and recreational boaters on best management practices (BMPs) that can be used to prevent or reduce pollution. Clean Marina designations recognize the environmental stewardship of marinas for exceeding regulatory requirements by voluntarily incorporating higher environmental standards into daily operations.

Dave Chapman with Carla Timmons of the Pier Point Marina

The Delaware Clean Marina Program, a partnership between DNREC's Divisions of Soil and Water and Water Resources, University of Delaware's Sea Grant Marine Advisory Service and the Center for the Inland Bays, was officially launched on Monday, June 16, 2003 during a press event held at the Indian River Marina in Rehoboth Beach, Delaware. With almost fifty people in attendance, Secretary John Hughes of the Delaware Department of Natural Resources and Environmental Control spoke on how this voluntary coastal nonpoint pollution prevention program, geared towards marina owners and operators, is invaluable to protecting the natural resources of the State of Delaware. During the press event, six marina owners/operators signed the "Clean Marina Pledge" stating that, within the next year, they pledge to identify opportunities and implement practices to control pollution associated with vessel maintenance and repair, sewage

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Delaware Coastal Programs 2003-2004 Grants -

Habitat and Natural Resource Planning, Management and Protection Assistance Grants available to Delaware's Local Governments (County and Municipal) and Communities

The Delaware Coastal Programs of the Department of Natural Resources and Environmental Control's Division of Soil and Water Conservation annually provides grant funding to enhance the ability of local governments to conserve, manage, or protect habitat and natural resources in Delaware. These funds are also available to local communities (e.g. maintenance corporations, homeowner associations, etc.) for the restoration and management of community open space as natural habitat.

Competitive grants in amounts not to exceed $ 15,000 will be available for the specific purpose of improving their ability to conserve, manage, and/or protect habitat and natural resources within their jurisdictions.

Funds may be used for the following purposes: 1) the development of local ordinances to help protect natural resources and habitat; 2) the development of environmental design standards for inclusion in local comprehensive land use plans; 3) the completion of natural resource and habitat assessments (including GIS mapping and analysis of natural resources) at the local level as well as the concepts outlined in the Governor's Livable Delaware agenda; 4) the implementation of natural habitat

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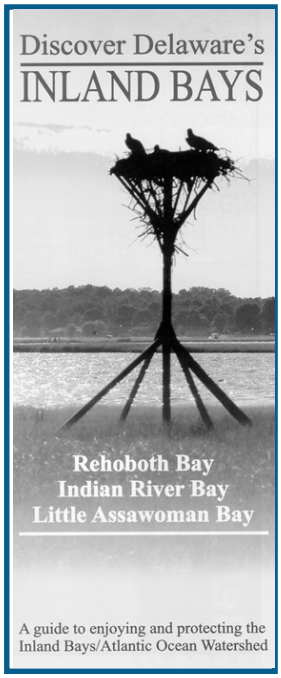
Discover Delaware's Inland Bays

Delaware's three Inland Bays, which were designated as an estuary of national significance in 1988, cover 32 square miles, separated by a barrier beach from the Atlantic Ocean. Indian River and Bay is a shallow drowned river valley system with freshwater inflow as well as a direct connection to the ocean through the Indian River Inlet. Rehoboth Bay is a shallow coastal lagoon system behind a narrow barrier island. It connects to the ocean by the Lewes and Rehoboth Canal and the Indian River Bay. The smallest and shallowest is the Little Assawoman Bay which connects to the ocean via the Ocean City Inlet.



Their sheltered tributaries, bay bottom grasses and sandy shorelines provide habitat for numerous plant, animal and fish species. The recreational opportunities attract boaters, anglers, clammers, crabbers and wildlife watchers.

An Inland Bays water use brochure, entitled *Discover Delaware's Inland Bays*, is now available from the Delaware Department of Natural Resources and Environmental Control. This brochure, funded by a NOAA grant to the Department's Coastal Management Program, is currently being distributed throughout the Inland Bays watershed. The purpose is to make everyone who enjoys the many wonders of the Inland Bays more knowledgeable about the sensitive environmental resources and habitat areas within and proximal to the bays and suggest ways to act as responsible environmental stewards.

Another component of this project, as described in the poster, is to install water level markers in low depth-to-bottom areas of the bays. Markers will be placed in critical shallow-water habitat areas frequently destroyed by propeller action from boaters. The markers will help boaters identify certain sensitive resource areas that should be avoided during different tidal phases. The Delaware Inland Bays are part of the National Estuary Program. This poster satisfies several of the recommendations contained in the Inland Bays Water Use Plan (1999) and the Inland Bays Comprehensive Conservation Management Plan (1995).

Copies of the poster may be obtained by contacting the Department's Information and Education Office at (302) 739-4506.

DCP Grants, continued from page 3

restoration projects on county, municipal, or community public lands or community open space. Local education activities that promote the protection of riparian habitat, critical natural area, freshwater wetlands, and/or watershed protection will also be considered for funding.

A request for proposals will be issued during the fall of 2003. To be placed on a mailing list to receive this grant availability announcement, please contact either Dave Carter or Susan Love at (302) 739-3451 or by email at David.Carter@state.de.us or Susan.Love@state.de.us.

Regulations, *continued from page 1*

by accessing the DNREC web site at http://www.dnrec.state.de.us/dnrec2000/Divisions/Soil/ShorelineCons/Shoreline.htm. For questions regarding the revised regulations, please call Maria Sadler at (302) 739-4411 or e-mail her at Maria.Sadler@state.de.us.

Brownfield Restoration and Re-use Compendium for Coastal Communities

This fall, the Delaware Coastal Programs (DCP) and the Delaware Division of Air and Waste Management (DAWM) will team up on a project to improve Brownfields redevelopement in Delaware's Coastal Areas. Redevelopment of Brownfields promises to provides environmental improvements in degraded coastal areas, economic revitalization in coastal communities, and is an important land use strategy that can help stem the problems associated with sprawling development, one of the largest threats to coastal resources. This project aims to avoid future degradation of coastal resources due to development by improving mechanisms to restore Brownfields, thereby reducing development pressures and associated coastal impacts in undeveloped areas while revitalizing underutilized or abandoned land along the Delaware Coast.

Sussex Brownfield site before revitalization

What is a Brownfield?

A Brownfield is simply an abandoned or under utilized property that is not being used to its potential. They are previously used sites, which can be rehabilitated and put to better use.

Why is Brownfield Revitalization Important?

Every Brownfield Revitalized, is one less "green" field that will be developed.

The State of Delaware has been facing tremendous developmental pressures over the past decade due to an influx of businesses attracted to the State by friendly tax laws and by great economic growth. This economic growth, coupled with its corresponding repercussions on land use in the State, has sparked tremendous concern regarding responsible development policies. Brownfield redevelopment is a cornerstone of such policies. Remediation and redevelopment of Brownfield sites helps funnel commercial or industrial development into areas already possessing necessary infrastructure, helps revitalize communities, and improves environmental health by removing or sequestering environmentally available contaminants.

The State of Delaware has numerous policies and incentives for Brownfield redevelopment. The DCP has a formal development policy that states "Use of existing unused industrial sites and buildings should be encouraged whenever they can be adapted to today's needs." In addition, Section 303 of the Federal Coastal Zone Management Act of 1972 identified the re-development of deteriorating urban waterfronts as one of its goals. Delaware's Brownfield Legislation was signed into law in 1995. In addition, Delaware's Legislature also passed an amendment to Delaware's Hazardous Substance Cleanup Act (HSCA) to encourage voluntary agreements for redeveloping Brownfield sites and to streamline the site cleanup process. Fiscal incentives have also been put in place to complement the regulatory tools. The State provides corporate tax credits to businesses for cleanup and redevelopment of Brownfields and a State financial assistance program administered through the Delaware Economic Development Office (DEDO) to offset a portion of the costs associated with the investigation and cleanup of Brownfields.

Despite the State's efforts to make Brownfield redevelopment a more attractive development option, Brownfield restoration and re-use has not reached its full potential in Delaware for a number of reasons. Apprehension and fear of liability are still limiting factors that deter many interested parties from considering the restoration or redevelopment of Brownfield areas. Much of this apprehension arises from

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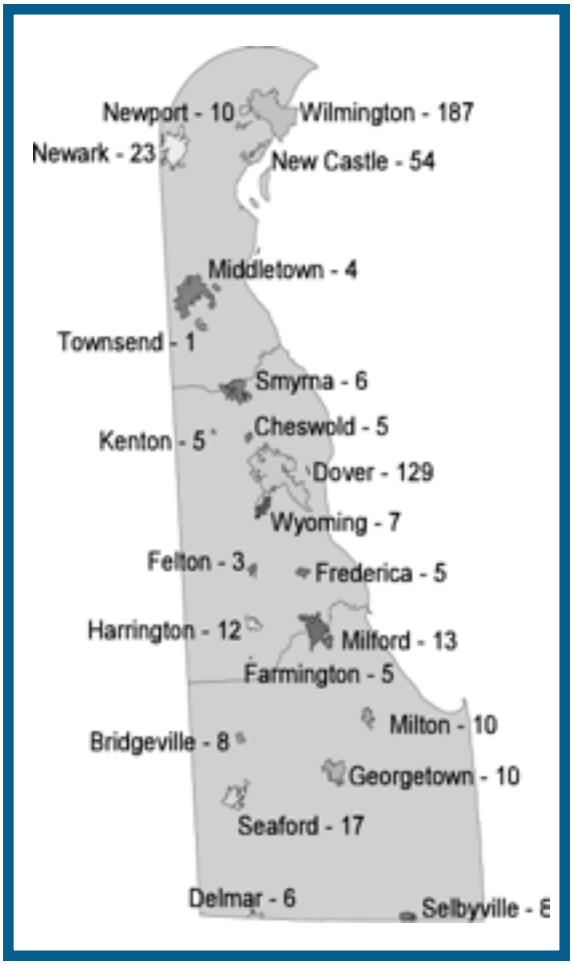
after revitalization

a lack of basic information about sites which adds uncertainty to the preliminary planning phase of projects. These concerns may be overcome by clear and detailed information regarding site history, contaminant types and levels, environmental threats, potential for re-use, cleanup costs, and/or a list of unknowns about the site for a potential developer early in the planning process. In addition, community concern of potential contamination issues, local zoning and local ordinances can impede redevelopment of sites. Providing more information about these sites to local communities will enable them to better address and plan for appropriate restoration and redevelopment of Brownfields and to avoid conflicting local codes that hinder community revitalization in these areas. It will also help reduce the public concern that arises from the "unknown" with regard to these sites. This should help communities better understand the complex issues surrounding the level of clean-up or the type of use most acceptable for blight areas of their neighborhoods.

How will this project help?

This project will develop a Brownfields resource tool for Delaware's Coastal Zone, waterfront areas and communities. Through a structured and deliberate process, the most useful information about Brownfields will be identified, existing disparate data and information will be collected and organized, and data and information gaps will be determined. All of this information will then be compiled into detailed site profiles. Based on the profiles, sites will be prioritized for restoration and redevelopment based upon environmental, economic, and community interest factors. This information will be included in a comprehensive compendium for use in promoting and marketing the wise re-use of land in Delaware. An accompanying ArcGIS based decision support system will also be developed that provides graphical representation of pertinent information. This information will be made available to the general public on the internet and can be utilized for site re-use decisions that is scalable to the State, regional, local, and parcel level. Finally, the use of this information and how it can be integrated to enhance existing Brownfield efforts will be presented to those who can use it most through a series of Decision Maker workshops in cooperation with staff from the Delaware National Estuarine Research Reserve (DNERR) and DAWM. This project will likely serve as a prototype for an effort to be expanded Statewide.

For additional information please contact Ed Cervone or David Carter at (302) 739-3451 or through email: ed.cervone@state.de.us or david.carter@state.de.us.



Approximate number of Brownfield sites.

Delaware National Estuarine Research Reserve Graduate Research Fellows

Research conducted at the DNERR is performed by many groups. The Graduate Research Fellowship program provides two graduate students every two years to conduct research projects within the Reserve boundaries. The projects address issues that will expand the understanding of estuary functions and lead to improved management decisions. Currently, both DNERR Fellows come to us from the University of Delaware. The projects and Fellows are:

Michael League – UD, College of Marine Studies
Advisor: John Gallagher

Title: A comparative study of the rhizome growth dynamics of native and non-native stands of *Phragmites australis* in Delaware, with emphasis on the population dynamics in the Delaware National Estuarine Research Reserve

Michael's research will be examining the below ground and the associated above ground morphological and cellular-based differences between native and non-native strains of *Phragmites* within Delaware and evaluate the responses of the genotypes to nutrient enrichment. He will use populations of native and non-native *Phragmites* from the DNERR for studies examining whole plants in the field, and growth potential bioassays and growth rate experiments in the laboratory. The hypothesis is that differences exist in the rhizome growth dynamics of the two populations that result in the differences in expansion rates and biomass.

Anne Mundel – UD, Dept of Geology
Advisor: John Madsen

Title: Water quality monitoring to assess the effect of non-point source nutrient and other pollutant loads on estuarine watersheds

Anne's research will address one of the critical problems of Delaware's estuarine waters, the effect of non-point source nutrient and other pollutants loads, including suspended sediments on the water quality and the dynamics of the estuary. She will be closely monitoring the runoff and background water quality of the Blackbird component of the DNERR as active development continues on property adjacent to the Reserve. Information from this monitoring will then be incorporated into landuse and water quality models to better assess the impact of development and alternative development practices.

For more information about the GRF program please contact the DNERR Research Coordinator, Dr. Robert Scarborough, at (302) 739-3436.

Delaware National Estuarine Research Reserve Expands!

The Delaware National Estuarine Research Reserve is pleased to announce the opening of the new wing to its Visitor Center located at the St. Jones Component, south of Dover. The addition adds 1700 sq. feet of meeting space and visiting researcher quarters. Within the last three years, the amount of activity at the Reserve has increased tremendously. It has become an ideal meeting location just outside the Capitol in a beautiful natural setting.

The Reserve identified the need for more meeting space as a result of the growing education program and the amount of visitors to the Reserve. Currently approximately 5,000 school children and 1,000 meeting attendees visit the Reserve each year. In the past, any gathering of over 10 persons would require the entire large conference area. This denied the public access to many educational displays. The new meeting room is sized to handle our most common group size. It can

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DNERR, continued from previous page

accommodate groups of 18 behind tables and 25 in row seating.

In the past the Reserve lost potential researchers due to a lack of short term sleeping facilities. There are now four dormitory style rooms that are able to sleep a total of 12. This new space allows the Reserve to draw in more partners to conduct on-site research as well as host small meetings. Please contact the Reserve at (302) 739-3436 for more information about reservations.

Dnerr's new wing

Upcoming Coastal Workshops and Events

Community Open Space Management Workshop

GrassDale Conference Center, Delaware City, DE
October 11, 2003, 9:00 a.m. to 4:00 p.m.

Communities across the state are faced with managing large tracts of open space. The traditional maintenance functions are time consuming and costly. Many communities are exploring innovative techniques to restore natural habitat and promote biodiversity with environmental friendly and fiscally responsible new practices. There is a great deal of untapped technical and financial assistance available from both public and private organizations. A workshop has been developed to highlight these issues and give community leaders the resources needed to identify alternative management options.

The workshop, sponsored by the Delaware National Estuarine Research Reserve and Delaware Coastal Management Program will consist of morning presentations and afternoon field trips. If you would like more information please contact David Carter at (302) 739-3451 or Mark Del Vecchio at (302) 739-3436.

Waterfowl Festival

Prime Hook National Wildlife Refuge
October 11, 2003
8:00 a.m. – 4:00 p.m.
For additional information please call (302) 684-8419 or visit website http://primehook.fws.gov

Guided Bird Walks

Prime Hook National Wildlife Refuge
October 18, 2003 and
November 15, 2003
For additional information please call (302) 684-8419 or visit website http://primehook.fws.gov

Center for the Inland Bays James Farm Ecological Preserve Open House

Saturday, October 18th
10 a.m. 'til 3 p.m.
Cedar Neck Road
Ocean View, DE

Center for the Inland Bays All You Can Eat Pig Roast, Chicken and Beer

Saturday, October 18th
4 p.m. 'til 7 p.m.
James Farm Ecological Preserve
Cedar Neck Road
Ocean View, DE
$15 advance (members)
$20 advance (non-members)/ $25 door
For info. or tickets, call (302) 645-7325
(supports programs at the James Farm Ecological Preserve)

Autumn at Abbott's Mill Festival

Sat., Oct. 18, 2003 10 a.m.-4 p.m.
Come to Abbott's Mill Nature Center on Road 620 off Route 36 near Milford, Del. and enjoy:
- Live Wild Animal Exhibits
- Guided Canoe Excursions
- Historic Gristmill Tours
- Children's Activities - scarecrow stuffing and more
- Colonial Skills Demonstrations
- Native American & Environmental Exhibits
- Craft Sales - Music - Refreshments

ADMISSION: Adults $2.00, Children ages 6-12 50¢, under age 6 free

Upcoming Coastal Workshops & Events Con't.

Waterfowl Festival
Bombay Hook National Wildlife Refuge
October 25, 2003
9 am - 5 pm.
A day filled with birding and outdoor activities.
For additional information please call (302) 653-6872 or visit website http://bombayhook.fws.gov

Winter Bird Communities around Prime Hook - Lecture
Prime Hook National Wildlife Refuge
November 15, 2003
7 p.m.
For additional information please call (302) 684-8419 or visit website http://primehook.fws.gov

15th Annual Beach Grass Planting
March 26, 2004
9:00 a.m. to 12:00 p.m.

Each March since 1990, many dedicated volunteers have stabilized Delaware's sand dunes by planting more than 4,540,000 stems of Cape American beachgrass on Delaware's ocean and bay beaches. The 2004 Beach Grass Planting will be from 9 a.m. to 12 noon on March 26th. If you have any questions regarding the 2004 Beach Grass Planting or would like additional information on planting of Beach grass please call (302) 739-4411 or e-mail your questions to Maria.Sadler@dnrec.state.de.us.

Remote Sensing - *continued from page 3*

Environmental Control (DNREC) issued its first formal beach protection regulations in 1981. These regulations that included a beach setback line, was based on aerial photography taken in 1979. The building line that was finished in 1983 extends the entire length of the beach along Delaware's coastline.

The "Setback" or "Building Line", as Delaware uses it, is a line created from a series of points that run all the way up the beach-portion of Delaware's Coast. These points are generated from measuring inland a certain distance from specific elevation contours as specified in the Beach Regulations. On the Atlantic coast the building line is located "100 feet landward of the adjusted seaward most 9 foot contour above NAVD (North American Vertical Datum.)" On the southern extent of the Delaware Bay-beaches, the Building Line is defined as "100 feet landward of the adjusted 6 foot elevation contour above NAVD." On the northern extent of the Delaware Bay-Beaches, the building Line is defines as "75 feet landward of the adjusted 6 foot elevation contour above NAVD." The line is set inland from the contours 100 feet on the Atlantic and either 100 or 75 feet on the Delaware bay to minimize the disturbance of the dunes. These dunes shrink and expand naturally and help protect the coast from violent wind and waves during storms. Without the dunes, buildings on the coast would be severely damaged or destroyed during coastal storms.

In order to keep up with development and continue the protection of the Delaware Beaches, DNREC decided to update its Building Line. On October 2, 2002, DNREC had aerial photography flown of the entire beach-area of the coast in order to update the old building line. The new building was created with the same parameters as the old line with the exception that the new line utilized all the latest technology and was created with greater accuracy. EarthData International was contracted to fly the coast and generate the necessary contour lines.

A total of 6 Flight Lines and 129 exposures were needed to cover the beach-portion of the coastline. The photography was taken at an altitude of 4,260 feet above the ground and was

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Remote Sensing - *continued from page 3*

Sample of aerial photography

exposed in conjunction with airborne and ground GPS receivers. Standard Photogrammetric methods were used to derive the contour lines because of the high accuracy needs.

Using ArcGIS, the Delaware Coastal Programs created a series of maps depicting the updated setback line. Creating this continuous series of maps was accomplished using the Map Series Tool for ArcGIS. With this tool, the beach-portion of the coast can be mapped in a logical, indexed series of maps that can be easily referenced by decision makers and other officials.

To create the setback line, a parallel line was created from the contour lines generated by EarthData International with the parameters stated in the Beach Regulations (75 or 100 feet.) On this line, points were selected that lined up with the old setback line points. (The old setback line points were spaced about 200-250 feet apart. These points are used for field surveying, and are labeled on the final maps with a northing and easting. From these new setback points, a final Setback Line is created using the ET Geowizard for ArcGIS. Using the "Point to Polyline" function all the points were connected making one continuous setback line.

The final series of maps will have aerial photography as a background to show the user where the updated setback lines fall along the coast. Each individual map will have a map key, a scale bar, and a small inset map showing it's location on the coastline with roads, municipalities, and adjacent maps to create a frame of reference. All the maps will have both the old and new setback line and its corresponding contour line. This will show how the dunes have moved since the last setback line was created.

This update of the coastal setback line will enable State officials to regulate construction along our sensitive coastline in a fair and efficient way. It will help preserve, protect, and in some cases enhance Delaware's precious coastal resources and enable future generations to enjoy the beauty and splendor of Delaware's beaches.

Clean Marina - *continued from page 4*

disposal, hazardous waste, stormwater runoff, and other topics outlined in the Delaware Clean Marina Guidebook. On hand to sign pledges were: Jim Beard of Rehoboth Bay Marina, Jo Ann Barnard of Delaware City Marina, Inc., Carla Timmons of Pier Point Marina S. K. Management, Inc., Janice Trala of Summit North Marina, Marvin Kahl of Cedar Creek Marina, and Doug Long of Delaware Seashore State Park Indian River Marina. Nanticoke Marina has also signed the pledged to become a Clean Marina.

If you have any questions or would like your marina to become a "Clean Marina", please call Dave Chapman of the University of Delaware Sea Grant at (302) 645-4268 or send an email to dchapman@udel.edu.

Sample of setback line map

Delaware Coastal Management Program
89 Kings Highway
Dover, DE 19901
(302) 739-3451

http://www.dnrec.state.de.us/
DNREC2000/Divisions/Soil/dcmp

Environmental Program Administrator
Sarah W. Cooksey

Environmental Program Manager
David B. Carter

Administrative Specialist
Pat Hoffman

Application Support Specialist
Lonnie Dye

Environmental Scientists
Kimberly B. Cole
Tricia Cosbey
Timothy Lucas
Bonnie M.Willis

Planner
Susan Love

NOAA Coastal Management Fellow
Ed Cervone

Environmental Engineer
Carl Yetter

Intern
Rachael S. Coffey

Coastal Delaware

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Delaware National Estuarine Research Reserve
818 Kitts Hummock Road
Dover, DE 19901
(302) 739-3436

http://www.dnrec.state.de.us/
DNREC2000/Divisions/Soil/dnerr

Reserve Manager
Mark Del Vecchio

Research Coordinator/ Environmental Scientist
Dr. Robert Scarborough

Research Technician
Mike Mensinger

Education Coordinator
Katy Lamborn

Estuarine Educator
Kate Marvel

Conservationist
Wes Conley

Delaware Coastal Programs
89 Kings Highway
Dover, DE 19901

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